

*V. fimbriatula*, *V. lanceolata* and *V. primulifolia*." Leader, Mr. David Fables. Attendance 12.

APRIL 22. NEW JERSEY COLLEGE FOR WOMEN. Although the early spring made this a grand day for outdoors, our experiment with the laboratory study of a group, the lichens, was an obvious success. Carefully selected material, very able presentation, interested people, and ample equipment for individual work led all participants to call it a profitable experience. A few Chitrids and other forms were shown by Miss D. Fay. Leader, Mr. G. G. Nearing. Hostess, Miss Hettie Chute. Attendance 16.

## PROCEEDINGS OF THE CLUB

### MINUTES OF THE MEETING OF FEBRUARY 6, 1945

The meeting was called to order by President Seaver at 8:30 p.m. in Room 710 of Schermerhorn Extension, Columbia University. Thirty-eight members and friends were present. The minutes of the preceding meeting were approved as read.

The scientific program was presented by Dr. H. E. Warmke. His most interesting paper was entitled, "Studies on Localization of the Male Determining Gene in *Melandrium*." The speaker's abstract follows:

In 2AXXY plants of *Melandrium dioicum*, the Y-chromosome is found to undergo frequent spontaneous breakage, and thus producing deficiencies of varying lengths. This breakage is believed related to asynapsis of the Y-chromosome, which is high in these stocks.

In 2AXXY plants gametes with large Y-deficiencies are functional because such deficiencies are "covered" by an accompanying X-chromosome. Since the Y-chromosome in this species is known to carry the major male genes, opportunity is thus afforded for studies of number, location, and effect of specific male-determining genes.

Evidence is now at hand for the presence of at least three distinct genes in the Y-chromosome of this species important in the development of maleness: one, which suppresses femaleness, is in or near the homologous segment; one, which initiates the male structures, is near the centromere; and one, which carries male development to completion, is near the end of the differential arm.

After considerable animated discussion the meeting was adjourned at 10:05 p.m.

Respectfully submitted,

FRANCES E. WYNNE  
RECORDING SECRETARY

### MINUTES OF THE MEETING OF FEBRUARY 21, 1945

The meeting was called to order by President Seaver at 3:30 p.m. in Room 710 of Schermerhorn Extension, Columbia University. Twenty members and

friends were present. The minutes of the preceding meeting were read and approved. Eight annual members and two associate members were unanimously elected. The transfer of three annual members to associate membership was approved. The resignations of thirteen members were accepted with regret.

Dr. Seaver reported that the Auditing Committee had completed examination of the books, found them correct, and turned them over to the new Treasurer, Dr. Fulling.

The scientific program of the afternoon consisted of a paper by Dr. Lawrence P. Miller, entitled "Induced Formation of Glycosides in Plants." The speaker's abstract follows:

The addition to the nutrient medium of plants of organic chemicals which can serve as aglycons leads to the formation of  $\beta$ -glycosides in such plants. The ability of plants to form these  $\beta$ -glycosides seems to be very widespread and not correlated with the known occurrence or non-occurrence of natural  $\beta$ -glycosides in the species studied. Many of the species investigated were able to withstand the addition of relatively large amounts of chemical with the result that the  $\beta$ -glycosides formed became major constituents quantitatively of the tissues produced. The identity of the glycosides formed was established through isolation of the pure crystalline substances and comparison with the corresponding synthetic compounds which were especially synthesized in connection with these investigations. The type of  $\beta$ -glycoside formed depended upon the species, the particular plant organ involved and the chemical. Frequently the sugar component was not D-glucose. With solanaceous species some  $\beta$ -gentiobioside was always formed although gentiobiose is not known to occur normally in this family. In some instances in which the added chemical did not contain an hydroxyl group, other organic reactions had to take place within the plant prior to glycoside formation. It is suggested that studies of this nature are valuable in yielding information as to the type of organic reactions plants can carry out and as to the distribution or possible distribution of various sugars other than D-glucose in different species of plants.

After considerable discussion, the meeting was adjourned at 4:45 p.m.

Respectfully submitted,

FRANCES E. WYNNE  
RECORDING SECRETARY

#### MINUTES OF THE MEETING OF MARCH 6, 1945

The meeting was called to order by President Seaver at 8:25 p.m. in Room 710 of Schermerhorn Extension, Columbia University. Twenty-seven members and friends were present. The minutes of the preceding meeting were approved as read.

Dr. Karling explained that Sigma Xi meeting would interfere with attendance of Columbia members on May 1 and suggested that the meeting be postponed until a later date. It was left to the program committee to arrange this.

The scientific program of the evening consisted of a lecture "The Pineapple Industry" by Ralph Holt Cheney. The speaker's abstract follows:

A brief monographic survey was given to the subject of the Pineapple and Man as the story of an economic plant in relation to human welfare. This golden fruit of the Guarani Indians of Brazil and Paraguay was welcomed so ardently by Europeans that the keen competition in its improvement by English and French hot-house growers during the 17th and 18th centuries, resulted not only in the development of more desirable strains of the pineapple, but also contributed a great deal to the technique of hot-house culture in general. There now exist several commercial varieties and thirty mutations are known. Mutations in the pineapple are occurring in asexually propagated varieties. These mutations are classified as regressive, progressive, dominant, and recessive. The mutation parade in pineapple agriculture suggests that mutations in these asexually propagated forms may cause a continuous and gradual change in the genotype so that ultimately a variety may develop genes not originally present and may lose some genes which were present. There is evidence that during asexual reproduction, there is an accumulation of recessive mutations in the germ plasm which may become evident in later sexual reproduction.

Several different botanical phases of the pineapple were summarized to illustrate the application of research in pure science to this economic plant. Experimental work was cited under the following categories:

1. Fruit morphology and its relation to the economic value.
2. Fruit phytochemistry (acids, vitamins, enzymes) in relation to its dietary significance.
3. Phycmycete and Fungi Imperfecti organisms in pineapple pathology.
4. Pineapple physiology and iron absorption by crown adventitious roots.
5. Agricultural procedures including hormone stimulation of fruit formation and the commercial production (including by-products) as practised on the Hawaiian Islands of Oahu and Lanai was shown by kodachrome slides.

Discussion followed Dr. Cheney's paper. The meeting was adjourned at 9:20 and tea was served by Columbia ladies.

Respectfully submitted,

FRANCES E. WYNNE  
RECORDING SECRETARY

#### MINUTES OF THE MEETING OF MARCH 21, 1945

The meeting was called to order by President Seaver at 3:40 p.m. in the Members Room at The New York Botanical Garden. There were twenty-four members and friends present. The minutes of the preceding meeting were approved as read. Fifteen annual members and four associate members were unanimously elected. The transfer of four annual members to associate membership was approved. The resignations of two members were accepted with regret.

Dr. Small read the following resolution:

*Whereas*, The Torrey Botanical Club has for over 75 years encouraged the study and

elucidation of the native plants and their distribution, particularly within a radius of 100 miles of New York City—the so-called Torrey Range—and

*Whereas*, the preservation of representative samples of native vegetation is essential to the continued study and teaching of floristics, and

*Whereas*, the area incorporated as the Borough of Island Beach represents a unique example of seashore vegetation, the only undisturbed and well developed area of this type of vegetation of any considerable size in New Jersey and the adjacent states,

*Be it resolved*: that the Torrey Botanical Club deploras the threat to transform this area into a public State Park of the type implied in recent specific proposals of the State Department of Economic Development.

*And be it further resolved*: that the Torrey Botanical Club urges that the Federal Government take over this area and administer it as a National Seashore through the National Park Service.

Dr. Small made the following motion:

I move the adoption of the above resolution, that it be spread upon the Minutes of the Club, that it be printed in TORREYA, and that copies of it be sent to the State of New Jersey Department of Economic Development, the Governor of New Jersey, Congressman Auchincloss, and the National Park Service.

It was seconded by Miss Hanson and carried unanimously.

The scientific program of the afternoon consisted of a very interesting illustrated discussion by Prof. John M. Fogg, "Studies on the Pennsylvania Flora." The speaker's abstract follows:

During the forty-two years which have elapsed since the appearance of Porter's "Flora of Pennsylvania," a real need has developed for a more recent and more comprehensive account of the plant life of the State.

With the objective of preparing such a treatment, a group of graduate students, under the direction of the speaker, has for the last ten years devoted serious effort to field work in many of the sixty-seven counties of Pennsylvania. Collections made as the result of a great many field trips have been supplemented by material in the Herbarium of the University of Pennsylvania, as well as by specimens housed in the Academy of Natural Sciences of Philadelphia, the State Museum in Harrisburg, the Carnegie Museum in Pittsburgh, and the Department of Botany at State College. All of these institutions have generously made their material available, so that it has been possible to examine well over 200,000 sheets and to incorporate the information which they contain into our records.

For the purpose of recording data, a special card, approximately 10 x 14 inches, and composed of 100 percent rag paper, has been selected. There is at least one such card for each of the approximately 2,500 species and varieties of vascular plants known to occur in the State. Each card has printed on it, in geographical sequence, the names of the counties, and on each card is recorded, by means of a flat-bed typewriter, the essential information contained on the collector's label, such as exact locality, collector's name and serial number, and a symbol indicating the herbarium in which the specimen is housed.

Accompanying each record card is another card of the same size and material, on which is printed an outline map of the State showing county divisions, principal rivers and streams, and lines indicating the extent of placciation, the front of the Appalachian Plateau, the line of the Blue Mountains and the Fall Line. The localities contained on the record card are then transferred to the outline map in the form of black dots, so that for each recorded locality there is a corresponding dot on the map. The entering of these dots



is done with the utmost care, and, although the scale of the dot itself is probably two miles in diameter, the center of the dot is located exactly at the spot where the plant was collected.

A preliminary survey of the flora of the State indicates that of the approximately 2,500 species which constitute its flora, some seven or eight hundred are introductions. Of the remaining number (seventeen or eighteen hundred), the overwhelming majority are of wide-spread occurrence, which, if not already collected in each of the sixty-seven counties, may eventually be expected to be found there.

Of greater interest to the student of plant geography are the several hundred species which are of more limited distribution. These fall into such groups as the following:

1) Northern or boreal species which may reach their southern limit of range within the State, or which, if they continue southward, occur only in the uplands of the Valley and Ridge Province or on the Appalachian Plateau. This group includes such species as *Clintonia borealis*, *Cornus canadensis*, *Oxalis montana*, *Trillium undulatum*, *Coptis groenlandica*, *Actaea rubra*, *Calla palustris*, and *Rhododendron canadense*.

2) Southern species which reach their northern limit of distribution within the State. Examples of this group are *Pinus pungens*, *Menziesia pilosa*, *Boltonia asteroides*, and *Marshallia grandiflora*.

3) Species of the Mississippi and Ohio Drainages, which occur only in the western counties, such as *Trillium nivale*, *T. sessile*, and *Quercus imbricaria*.

4) Plants of the Coastal Plain which appear only east of the Fall Line in Bucks, Philadelphia and Delaware Counties. To this category belong *Quercus phellos*, *Liquidambar*, *Styraciflua*, and *Ilex opaca*.

In addition to these groupings, which reflect broad geographic distributions, many species owe their restricted occurrence to some particular soil preference or ecological requirement. Thus, *Asplenium cryptolepis* (*A. Ruta-muraria*), *Cheilanthes lanosa*, *Rhus canadensis*, and *Solidago squarrosa* which are marked calciphiles, are primarily restricted to outcrops of Cambro-Ordovician limestone; while *Talinum teretifolium*, *Cerastium arvense*, var. *villosum*, and *Aster depauperatus* occur only on the serpentine formations in the southeastern corner of the State. A number of maritime species, such as *Cakile edentula* and *Lathyrus maritimus*, are found only on the sandy shores of Lake Erie. A few shale barren species, such as *Senecio antennariifolius*, are restricted to barren slopes in Somerset, Bedford and Fulton Counties.

The primary objective of this work is the publication of a comprehensive account of the plant life of the State which shall be completely supplied with keys for identification and distributional maps. It is also planned to incorporate considerable information which will make the work useful to other than merely systematic botanists. For this reason an attempt will be made to interpret vagaries of distribution, where these are significant, and to include information drawn from such fields as ecology, cyto-taxonomy and genetics. The resulting volume should be of service to geologists, foresters, entomologists and teachers.

After discussion the meeting was adjourned at 4:45 for tea.

Respectfully submitted,

FRANCES E. WYNNE  
RECORDING SECRETARY

#### MINUTES OF THE MEETING OF APRIL 3, 1945

The meeting was called to order by President Seaver at 8:20 p.m. in Room 710 Schermerhorn Extension of Columbia University. Forty-four members

and friends were present. The minutes of the preceding meeting were approved as read.

The scientific program of the evening was presented by Dr. George S. Avery, Jr., "Hormonal Aspects of Plant Life." The speaker's abstract follows:

The basic discoveries in plant science, such as photosynthesis, respiration, and mineral nutrition, all have to do directly or indirectly with growth. In addition, plants produce minute amounts of organic substances which are important in the regulation of growth. These internally produced growth-regulatory substances are generally referred to as hormones.

Hormonal aspects of plant growth have been studied 1) in terms of naturally occurring hormones, and 2) from results obtained from applying synthetic hormones in various types of carriers to plant tissue. Tumors and disturbed growth patterns often result from the application of various synthetic hormones.

A number of new horticultural practices have arisen from the theoretical work of the past ten years on plant hormones: abscission control, dormancy control, rooting of cuttings, seedless fruit production, selective weed killing, etc.

After much discussion from the audience, the meeting was adjourned at 9:10 p.m. for tea.

Respectfully submitted,

FRANCES E. WYNNE  
RECORDING SECRETARY

#### MINUTES OF THE MEETING OF APRIL 18, 1945

The meeting was called to order by President Seaver at 3:30 p.m. in the Members Room of The New York Botanical Garden with twenty members and friends present. The minutes of the preceding meeting were approved as read.

The secretary read the following letters:

I wish to acknowledge your letter of April 5 containing a resolution passed by the Torrey Botanical Club deploring the threat to transform the entire area of the Borough of Island Beach into a public state park and recommending that the Federal Government take this area over and administer it as a National Seashore through the National Park Service.

There is evidently some grave misunderstanding on the part of the Torrey Botanical Club as to the recommendations and objectives of the Economic Council in proposing that the State of New Jersey acquire the area of Island Beach.

Obviously, anyone who implies that the ten-mile area is all to become a public playground equivalent to five or six "Jones' Beaches" is misrepresenting our recommendation. Such an idea is too ridiculous on its face to require refutation. The resolution of the Economic Council was proposed by former Governor Edison and I am sure he has as great a desire as the Torrey Botanical Club to preserve the natural beauty of Island Beach. The recommendation sponsored by the Economic Council calls for the preservation of Island Beach in its natural state with its development as a State Park in

which due consideration would be taken of the need for public recreation areas as well as for the preservation of the remaining area in its natural state.

I resent the implication that the Federal Government through its National Park Service is better able to retain the beauties of a section of New Jersey than New Jersey herself. It was the feeling of Governor Edison and the other members of the Economic Council that New Jersey through its Department of Conservation should protect the natural resources of our State and not always turn with our hands out to the Federal Government.

(Signed) Charles R. Erdman, Jr., Com.  
Dept. of Economic Development  
State of New Jersey

I have your letter of April 5 enclosing a copy of resolutions recently passed by the Torrey Botanical Club in reference to the proposal to make a public park out of the Borough of Island Beach.

I appreciate very much your sending me your views on this important matter.

(Signed) James C. Auchincloss, M.C.  
House of Representatives  
Washington, D. C.

An announcement was made concerning the next meeting, which will be a supper meeting on Wednesday, May 2, at the Brooklyn Botanic Garden.

The scientific program of the evening was presented by Mr. Otto Degener, "Plant Life and Customs of the Hawaiian Islands." Mr. Degener's interesting remarks were illustrated with slides and movies.

The meeting was adjourned at 4:40 p.m. for tea.

Respectfully submitted,

FRANCES E. WYNNE  
RECORDING SECRETARY

#### MINUTES OF THE MEETING OF MAY 2, 1945

After a picnic supper and a tour of the grounds of the Brooklyn Botanic Garden led by Dr. Svenson, the formal meeting was called to order by President Seaver at 8 o'clock. There were 31 members and friends present.

Three persons were unanimously elected to annual membership. The transfer of one annual member to associate membership was approved. The resignations of three members were accepted with regret.

The secretary read the following letter:

Thank you for your letter of April 5, informing us of the resolution passed on March 21 by the Torrey Botanical Club favoring the establishment of a national seashore to include the Island Beach property in New Jersey.

For a number of years the National Park Service has hoped that circumstances might permit the establishment of such an area. However, no funds are available to us for the purchase of the necessary land, and we are depending largely upon the local people and the State authorities to find ways and means of acquiring the property.

Mrs. Eleanor Marquand, Guernsey Hall, Princeton; Dr. George H. Schull, Princeton; and Mr. C. P. Wilber, State Forester and Director, Department of Conservation and Development, Trenton, are actively concerned with the problem at this time. If you have not already done so you may desire to obtain information from them as to their views in the matter. Any suggestions that your club, together with others concerned, might offer regarding means of advancing this important conservation proposal would be welcomed.

(Signed) Hillory A. Tolson, Acting Director  
National Park Service  
U. S. Dept. of the Interior

Dr. Small reported that a meeting of a committee of the persons mentioned above had already been called to consider the problem.

The scientific program of the evening consisted of two papers. Dr. H. K. Svenson spoke on the "Ecology of the New York area." His abstract follows:

The trip through the Local Flora Section of the Brooklyn Botanic Garden will be followed by a very brief account of the ecology of the New York region, to explain the areas represented by the plantings. These areas depend principally on geologic and climatic conditions. As represented in the Local Flora section they are: the Pine Barrens of New Jersey and Long Island; the Serpentine Barrens of Staten Island and eastern Pennsylvania; the limestone area of western New Jersey and eastern New York, and the crystalline granitic rocks of the Hudson Highlands; and the Hempstead Plains section of Long Island.

Represented are also such ecological units as a bog, a pond, a brook and a woodland—the plantations characterizing these units are also represented only by plants within the Torrey Club range.

Dr. George M. Reed spoke on the "Origin and Development of Flowering Cherries" and his abstract is as follows:

The oriental flowering cherries were largely developed in Japan and the history of their origin dates back approximately fifteen centuries. The starting point was the numerous wild cherry species growing in different parts of the Japanese Islands. The white northern mountain cherry and the red central and southern mountain cherry doubtless entered into the development of most of the varieties. As might be expected, there is great confusion in the nomenclature of the species. The cultivated forms were developed largely by the wealthy daimios and by the Buddhist Priests in the famous temples. Double varieties were secured many centuries ago. Probably the greatest development, however, occurred in the early years of the nineteenth century. How the improvements were brought about is not known.

The cherries are great favorites with the Japanese people and there are many famous places for viewing them. Some of the plantings date back for long periods of time, such as the ones along the Yoshino River near Kyoto, and at Koganei near Tokyo.

After discussion the meeting was adjourned.

Respectfully submitted,

FRANCES E. WYNNE  
RECORDING SECRETARY